

## Standard Hire Unit Specification

### Design Concept

Units are manufactured in a factory environment to ensure quality of finishes and accuracy of construction. Units are designed to stand alone or to be linked end-to-end, side-to-side or any combination of ways. Standard units can be stacked up to five units high and can be installed at any level within a complex.

Units are constructed from steel frame elements, which are sub-assembled and then bolted together to form a skeleton unit. External walls panels are then installed providing racking resistance and transmit loads into the floors and roof assemblies which act as diaphragms. Additional structural bracing can also be installed if required.

### Floor Construction

Floor deck is 18mm tropical hardwood plywood, bonded with phenol-formaldehyde adhesive, and is a W.B.P. grade material. Plywood is fixed to a steel chassis using self-drilling screws. Floor chassis assembly is constructed from longitudinal cold rolled main support members 305 x 89 x 19 x 3mm I.T.L.C. Z35 Galvanised G275 bright spangle. Three-compartment trunking is installed along each side formed from 2mm galvanised steel. Joists are then welded between at 400mm ctrs, joists are 125 x 38 x 3mm, cold rolled channels galvanised G275. Joists at each end of the chassis are formed from 125 x 65 x 15Kg PFC. All heat effected areas of the chassis and elements of mild steel are painted with zinc rich primer.

The whole of floor is under drawn with 0.6mm galvanised steel sheet which is tack welded and mechanically fixed in place. The void between the under drawing and floor deck is insulated with a glass quilt material. The 'U' value of the floor complies with the building regulations in place at time of manufacture. The above construction dependant on adequate foundations being installed is capable of withstanding loads up to 5kN/m<sup>2</sup>. As a standard the above provides an accessible route for data, voice, and power cables.

### External Columns

100 x 100 x 8mm cold formed rectangular hollow section to EN 10219:1 1997 – S275J2H. With R.S.A. brackets welded top and bottom to allow bolting to floor and roof assemblies. A

top plate is fully welded into the top of the columns with a 30mm nut welded to the underside to allow a lifting eye to be fixed during loading and offloading, and on lower units once sited for a locating cone to be fixed.

## External Walls

Walls are constructed from bespoke pressed galvanised steel sections and are fully welded. Vertical studs are fixed at circa 400mm centres. Panels are formed in nominal 1200mm and 300mm wide sections. Vertical edge studs are rebated to provide a weather tight seal at joints. The external face of the panels is clad with 12.7mm moisture resistant plasterboard, mechanically fixed and chemically bonded to the steel frame. An external cladding of 0.55mm thick Colorcoat HP200 steel sheet is chemically bonded to the plasterboard under a pressure bonding operation. 12.7mm pre-finished (a vinyl paper is pre-bonded to the board at suppliers to form a decorated finish) plasterboard is chemically and mechanically fixed to the inside face of the steel frame. The panels have a two-part 'H' section joint arrangement. The walls are insulated with a glassfibre quilt, the 'U' value of the wall complies with the building regulations in place at time of manufacture.

The above construction allows individual sections of panels to be removed independently, which allows quick turn around of refurbished units and total flexibility on site. It also ensures minimal production of waste material during refurbishment.

## Roof

Roof frame assembly is constructed from longitudinal cold rolled main support members 305 x 89 x 19 x 3mm I.T.L.C. Z35 galvanised G275 bright spangle (up to and including 9.6mtr span and for spans over this size the channel is 5mm thick) and is rolled from M.S. and painted with two coats of zinc rich primer. Joists are then welded between at circa 615mm ctrs. Joists are 102 x 38 x 25 x 2mm cold formed channels galvanised G275. Galvanised steel angle upstands are welded to the web of every third joist to form a fall to one end of the unit. Joists provide support for the external roof system and internal ceiling lining.

The roof is a proprietary manufactured insulated panel, comprising of a 0.5mm thick profiled external weather sheet of Colourcoat HPS200 Organic coated steel, with scintilla finish on the weather side and a two-coat protective system on the reverse side. The galv. alloy substrate is hot dip zinc-aluminium alloy coated steel to BS EN 10214: 1995. An internal

liner sheet of 0.4mm thick Colourcoat Enamel, 22-micron thick coating in bright white. The core insulation is Polyurethane (PU). The roof sheet is fixed in accordance with the manufacturer's standard details. Roof flashings are formed from Colourcoat HP200. The roofing system 'U' value complies with the building regulations in place at time of manufacture.

The ceiling is constructed from 15mm pre-finished (a vinyl paper is pre-bonded to the board at suppliers to form a decorated finish) Megadecco plasterboard mechanically fixed to the underside face of the steel frame via a steel 'U' section and finished with a plastic decorative insert.

Rainwater is discharged from the roof into a PVCu square line guttering and down pipe system. Rainwater pipes are 63mm. Colour is black.

### **Floor Finishes**

Generally, 2mm solid sheet non slip vinyl fully bonded to the floor deck as a standard. Carpet tiles can be supplied as an optional floor finish. Vinyl floor joints are finished with a chamfered 3mm thick aluminium floor strip.

### **Windows**

PVCu multicell extruded sections manufactured to BS EN. All corners mitred and fully heat welded. Opening sash hung on tilt and turn mechanism (opening internal) in a fully weather-stripped frame and held closed with non-locking Cockspur handles. The windows are double-glazed, sealed units comprising of 4mm clear float – 20mm air gap – 4mm low "E" glass which achieves a "U" value of 1.6w/m<sup>2</sup>K.

### **External Doors**

Softwood doorframes with machined rebates and frames to have hardwood threshold. Doors to be either flush plywood solid core with or without glazed aperture 2XG or 2XGG pattern. Glazing within external doors to be G.W.P.P. safety glass. Door furniture to be high quality and suitable for the application of the door. External door and casing will be finished with satinwood paint.

## **Internal Partitions**

Internal partitions are formed from a proprietary partitioning system of galvanised steel channel sections with studwork at nominal 400mm centres. 12.7mm pre-finished (a vinyl paper is pre-bonded to the board at suppliers to form a decorated finish) plasterboard, is mechanically fixed and chemically bonded to both sides of the partition. Joints incorporate a two-part 'H' section at panel joints. All partitions are non-load bearing. Glazing panels can be fitted to the partitions as required, glazing generally to be 6mm clear float however if it falls within a critical location as defined in approved document "N" of the building regulations then glazing will be 6.4mm laminate. The standard construction will achieve a sound reduction of 30dB. This can be increased to achieve up to 45dB if required.

## **Internal Doors**

Internal doors are to be pre-finished, solid core. Doors are installed to meet the appropriate fire rating for their particular application to conform to approved document "B" of the Building Regulations. Doors are hung in a softwood casing with plant on stops and are fitted with intumescent and cold smoke brush seal as required. Doors will be fixed with vision panels as required to conform to approved documents "M" & "B" of the Building Regulations glazing within doors will comply with approved document "M" of the Building Regulations, and will be glazed in 6.4mm G.W.P.P. safety glass. Ironmongery and door furniture to be high quality and suitable for the application of the door.

## **Internal Fittings**

Internal fittings, such as kitchen units, pin boards and notice boards shelving etc. can be supplied as required to suit the necessary application.

## **Internal Trims and Finishes**

- Skirting is a PVCu two-part finished white.
- Ceiling coving is a PVCu two-part finished white.
- Internal walls and ceilings are faced with a white washable vinyl faced paper.

## Plumbing

- Hot and cold-water services are run in copper pipe work with either capillary soldered joints or compression joints. Service valves are incorporated into the pipe work before every outlet to enable local isolation for maintenance or replacement. All exposed pipe work is painted grey. On site bay-to-bay connections are made with soldered capillary joints.
- Sanitary ware is white vitreous china to BS 3402.
- Wash hand basins are generally on towel rail bracket. Taps are chrome plated brass, wheel turn.
- Toilet pans are low level with white plastic cisterns with a black plastic seat and lid.
- Urinals are either waterless (ceramic) or flushing stainless steel troughs.
- Shower trays are plastics with upstands on three sides, shower wall lining is plastics three-sided wall liner c/w chrome plated rail and white shower curtain.
- Shower heaters are 7Kw c/w handset and riser rail.
- Hot water is provided by either point of use water storage unvented heaters with capacities or unvented cylinders, with the capacity of heater to suit the application.
- All wastes are run in white push fit plastic pipe work internally and grey or white push fit plastic external.

## Electrical

- All electrical installations are to be carried out in accordance with the latest IEE regulations.
- Fluorescent light fittings to be supplied with high efficiency tubes and switch start control gear.
- Generally, lighting will be linear fluorescents with polycarbonate diffusers or 2D batten fittings.
- Switching to comply with Building Regulations and generally is ceiling mounted PIR switch.
- Heating generally to be provided by 2kW wall mounted convector heaters, complete with integral thermostats.
- All sockets and switches to comply with BS3676.
- All lighting to be wired in a minimum of 1.5mm<sup>2</sup> cable, a loop-in principle will be used linking all live feeds at the light fitting.
- All ring circuits will be wired in a minimum of 2.5mm<sup>2</sup> cable.

- All radial circuits will be wired in a minimum of 2.5mm<sup>2</sup> cable.
- All cables to be LSF concealed within ceiling and internal partition and external wall construction and as required surface fixed in mini trunking.
- All copper earthing conductors, bonding conductors, and circuit protective conductors (CPC), will be in accordance with current IEE Regulations.
- All incoming services (water, gas etc) will be earthed at point of entry.